

AMENDMENTS TO THE SPECIFICATION

Page 3, please delete the first full paragraph (after the formula) and replace it as follows:

The function $F(x)$ represented in expression (1) is a nonlinear function shown in a graph of FIG. 2 and $F(x) = 0$ when $|x| > \epsilon_0$.

Page 9, please delete the second paragraph and replace it as follows:

FIG. 2 is a graph of the nonlinear function $F(x)$ used in the ϵ -filter.

Please delete the paragraph bridging pages 9 and 10 and replace it as follows:

FIG. 8 is a graph to show the nonlinear function $\phi_{\beta L, \beta h}(x)$ which defines the newly invented digital filter (β filter).

Please delete equation (3) on page 12, and replace it with the following new equation

(3):

$$y(m, n) = x(m, n) - \sum_i \sum_j a_{i,j} \cdot F(x(m, n) + x(m+i, n+j)) \quad (3)$$

$$y(m, n) = x(m, n) - \sum_i \sum_j a_{i,j} \cdot F(x(m, n) - x(m+i, n+j)) \quad (3)$$

Please delete the paragraph bridging pages 18 and 19 and replace it as follows:

The ~~$F_{\epsilon}(X)$~~ $F_{\epsilon}(x)$ (see FIG. 2) returns the same value for x with ~~$|X| \leq \epsilon$~~ $|x| \leq \epsilon$, otherwise it returns 0. Thus, $F_{\epsilon H}(\Delta x)$ and $F_{\epsilon L}(\Delta x)$ becomes the following:

Page 19, please delete the first full paragraph and replace it as follows:

This characteristic indicates a new nonlinear function defined by two parameters β_L and β_h as shown in FIG. 8 ~~$(\phi_{\beta_L, \beta_h}(X))$~~ $(\phi_{\beta_L, \beta_h}(x))$.

Page 19, please delete the second full paragraph and replace it as follows:

Using the new nonlinear function ~~$\phi_{\beta_L, \beta_h}(X)$~~ $\phi_{\beta_L, \beta_h}(x)$, expression (5) can be rewritten as the following expression (6):

Please delete the paragraph bridging pages 19 and 20 and replace it as follows:

In other words, expression (6) indicates the characteristic of a new nonlinear digital filter, which uses a new nonlinear function ~~$\phi_{\beta_L, \beta_h}(X)$~~ $\phi_{\beta_L, \beta_h}(x)$ to separate and suppress only the variation component of a specific amplitude band. This will be hereinafter referred to as “specific amplitude band variation component separation type digital filter” (or β -filter). As seen from the fact that expression (6) is derived from expression (4), the function is the same as the function provided by using two ϵ -filters in combination shown in FIG. 6. Therefore, one β -filter can accomplish conversion to “smooth skin” while preserving the texture of the skin in one process.

Page 22, please delete the first full paragraph and replace it as follows:

The function $\phi_{\beta L, \beta h}(X)$ $\phi_{\beta L, \beta h}(x)$, which is the fundamental part of the β -filter, is characterized by the fact that it is a nonlinear function acting only on level variations having an amplitude value between the two amplitude values $\phi_{\beta L}$ and $\beta h(X)$ $(\phi_{\beta L} \leq |X| \leq \beta h)$ $\beta h(x)$ $(\phi_{\beta L} \leq |x| \leq \beta h)$, and does not involve minute variation amplitude in the proximity of 0. Both functions of the conventional ε -filter, function $\phi_{\beta L, \beta h}(X)$ $\phi_{\beta L, \beta h}(x)$ and nonlinear function $F(X)$ $F(x)$ shown in FIG. 2, define the filter requirement in the amplitude area of level variation; the essential functional difference between both functions $\phi_{\beta L, \beta h}(X)$ $\phi_{\beta L, \beta h}(x)$ and $F(X)$ $F(x)$ can be compared to the difference between a band-pass filter and a low-pass filter in frequency.

Page 22, please delete the second full paragraph and replace it as follows:

In other words, the nonlinear function $\phi_{\beta L, \beta h}(X)$ $\phi_{\beta L, \beta h}(x)$ is introduced, whereby producing digital filter capable of selectively separating and suppressing or enhancing only level variations contained in a specific amplitude band of an input signal sequence consisting of level variations of various amplitudes.